17" LCD DISPLAY

Fold Down
Model Number
1710

ROSEN AVIATION

ROSEN AVIATION

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1710 TECHNICAL MANUAL

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Introduction and Display Overview

Welcome to the *1710 Technical Manual* for the 17" Fold Down LCD Display. This manual provides an overview of display details including:

- Pinouts
- Installation
- Operation
- Troubleshooting
- Specifications

The 1710 model includes the following features:

- 17" Diagonal Viewing Area
- NTSC / PAL / SECAM / RS-170 (B&W) and RGB Inputs
- RGB Compatible (VGA-SXGA)
- 1280 x 1024 Screen Resolution (SXGA)
- On Screen Display (OSD) functions
- Picture in Picture (PIP)
- 28 Volt DC Power Operation

The 1710 model accommodates the following optional controllers (sold separately):

- IR Remote Codes Available
- External 7-Button Controller

Pinouts

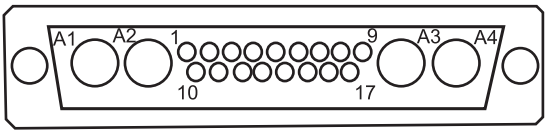
Pinout descriptions are provided to assist in the wiring process. Pay close attention to the pinout information while completing wiring connections.

Warning!
This display is for entertainment purposes only! Connect to noncritical power bus.

Main Interface Connector

The input connector on this monitor is a 21WA4 Male Combo D-subminiature with 17 size 20 contacts (standard density D-sub) and four Size 8 coaxial contacts, mounting in a size 4 D-subminiature shell. The following table provides detailed pinout information for the main interface connector.

Mating connector (included): Rosen Connector Kit 0300-030



MATING CONNECTOR LOADING VIEW

Pin	Control Signal
1	28V Return
2	+28V
3	N/C
4	N/C
5	N/C
6	RGB/Video Select Switch (TTL)
7	Status Output (TTL)
8	HSync
9	VSync
10	28V Return
11	+28V
12	N/C

Main Interface Connector Pinouts Continued:

Pin	Control Signal
13	Computer Sync Ground
14	N/C
15	N/C
16	N/C
17	N/C
A1-signal	Red
A1-shield	Red Return
A2-signal	Green
A2-shield	Green Return
A3-signal	Blue
A3-shield	Blue Return
A4-signal	Composite Video
A4-shield	Composite Video Return
Back Shell	Chassis Ground

Optional External Control Connector

The optional external controller interface is a 9-pin standard density D-subminiature male connector (part number 0300-402). For permanent installation, connector kit 0300-031 is required in addition to interface with the external control connector latch system.

Pin	Control Signal
1	Power On/Off
2	Source Select - Locked Out
3	N/C
4	Up
5	Down
6	Menu/Select
7	Left
8	Right
9	Ground (Common)

Installation Guidelines

The following instructions and drawings are provided to assist the installation process for your 17" Fold Down. Pay close attention to dimensions when considering installation requirements.

Note: The dimensions are listed in inches.

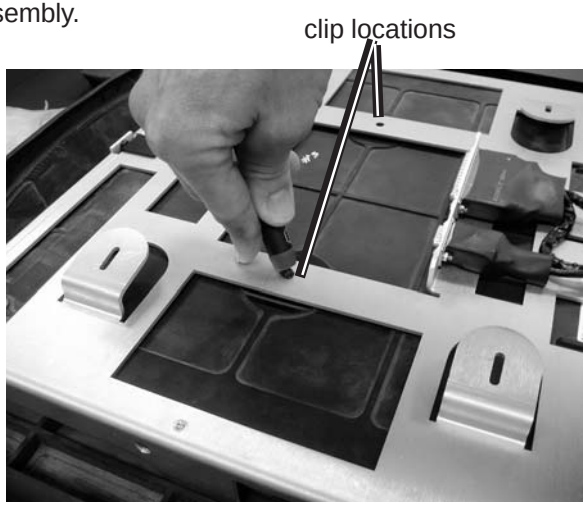
Shipped Contents:

- Monitor Assembly
- Connector Kit 0300-030

Installation Preparation:

Shroud Removal
Remove the display assembly and set it flat on its back as shown in the photo below:
Note: It is EXTREMELY IMPORTANT to set the assembly on something such that the weight rests on the frame and not on the plastic.

Open the display to its fully-open position (about 160 degrees), and then turn it on its side (or turn it over) to press out the (2) pine tree clips where shown below. Save the clips for reassembly.

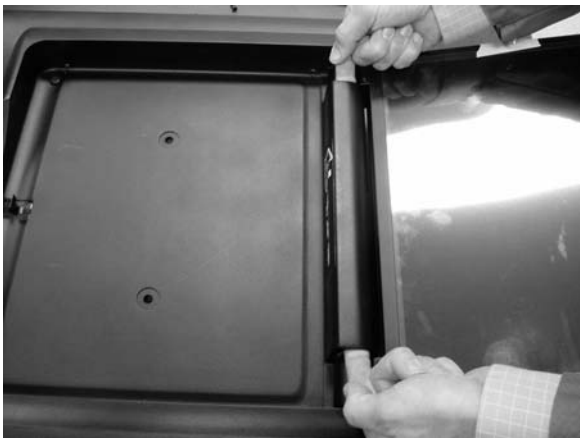


Leave the display opened, set the assembly on its back, and remove the (4) 8-32 x 3/8 socket-head cap screws (4) corner locations (see below). Save the screws for reassembly.
Note: It is EXTREMELY IMPORTANT to set the assembly on something such that the weight rests on the frame and not on the plastic.

Release the clip features by pulling back on the hinge region of the shroud where shown below.

With the display still in its fully-opened position, carefully lift the shroud off of the frame assembly. Pull back with your fingers to release the doghouse clips, and lift as shown in the photo below. Do not stress the outer edge of the enclosure, lift only as shown below.

WARNING! Do not force the shroud on or off the frame assembly. This delicate piece of plastic must be handled with extreme care.

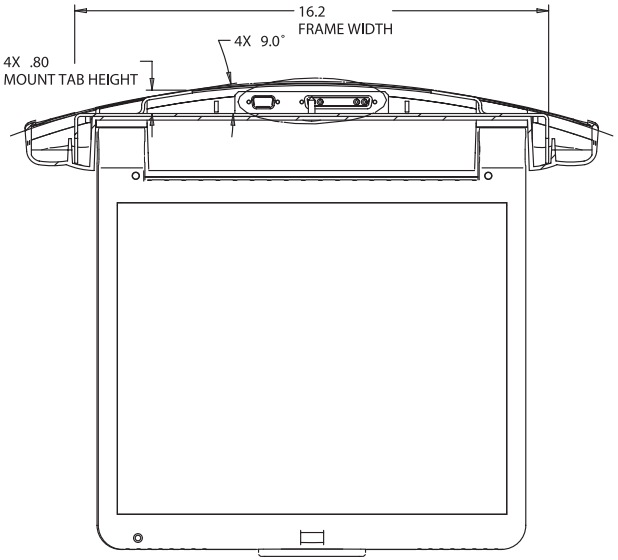


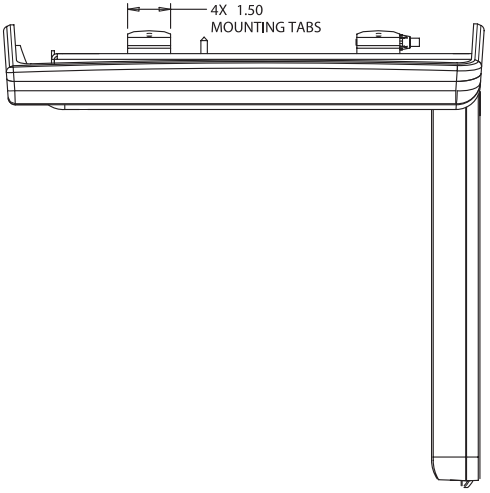
Use the following drawings to assist in mounting the 17” Fold Down assembly.

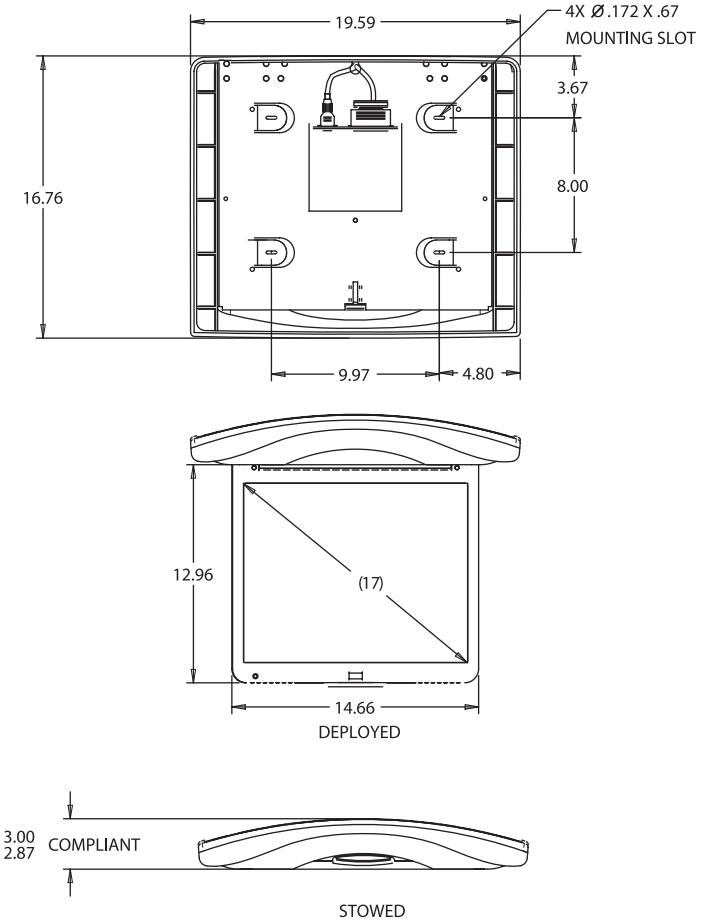
Note: Ensure that the connecting harness from the aircraft will be accessible to plug into after the assembly is mounted.

The following drawings are also available through Rosen's website at www.rosenaviation.com.

Listed dimensions are in inches.






19.59
4X Ø.172 X .67
MOUNTING SLOT
3.67
8.00
16.76
9.97
4.80
12.96
(17)
14.66
DEPLOYED
3.00
2.87
COMPLIANT
STOWED

Once the assembly has been mounted, plug in the harness and engage the side latch.

Open the display to its fully-opened position. Carefully place the shroud back onto the frame assembly by pressing it gently into place. Press only as shown in the photo below; support the shroud with one hand and press the hinge cover "doghouse" onto the assembly. Ensure that all of the doghouse clips snap into place.

Reinsert the (2) Pine Tree clips.

Replace the (4) 8-32 x 3/8 socket-head cap screws.

Adjusting the Rotation Stop:

The rotation stop may be adjusted to any position from 135 degrees to 180 degrees from stowed. It may be necessary to adjust the rotation stop such that the display does not open far enough to make contact with an obstruction.

There are two 6-32 socket head cap screws that need to be loosened to adjust the rotation stop; one at each end of the hinge (see photo below). Open the Fold Down to its fully-opened position (or as far as possible per obstruction), loosen the two 6-32 socket head cap screws, position the Fold Down to the desired rotation-stop location and retighten the 6-32 screws (torque to approximately 9 inch/lbs).

Note: Use a 7/64" Hex Key to loosen and tighten the 6-32 socket head cap screws.

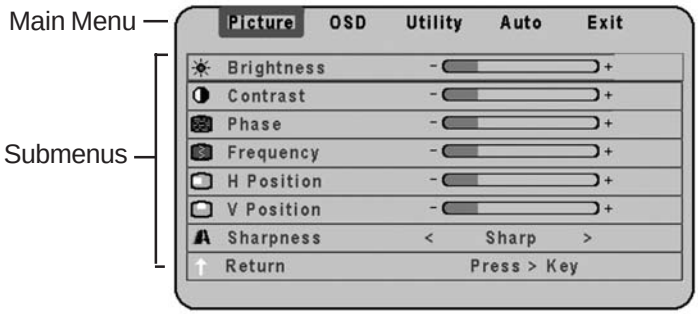
Operation

This Display turns on automatically when the Fold Down is in its opened position, and turns off automatically when the display is stowed.

The display auto-detects an RGB signal when an RGB signal is connected to the monitor by detecting the presence of the Hsync signal (pin 8 of the 21WA4 connector). If no RGB signal is detected, the display automatically switches to composite video input whether a video signal is present or not. The Source button on the optional controller will be locked out.

On Screen Display (OSD) Main Menu

The On Screen Display (OSD) provides a set of menus that enable you to adjust or view monitor features. Main menu selections lead to submenus with additional choices. Press the menu button on the switch panel to see the main menu.



To switch to different main menus (OSD, Utility, Auto) use the ◀ ▶ buttons on the switch panel.

To highlight a submenu use the ▼ button on the switch panel. When submenus are highlighted use the ◀ ▶ buttons to adjust up or down.

To return to the main menu highlight return in submenu and use the ▶ button on the switch panel.

To exit main menu use ▶ button until exit is highlighted and then press the menu button.

Note**:** It takes 5 seconds for changes to be stored into memory

Picture Submenu

Menu Option	Description
Brightness	Picture Brightness
Contrast	Picture Contrast
Phase	Removes Noise in RGB Mode.
Frequency	Adjusts the Picture Width in RGB Mode
H Position	Horizontal Position Adjustment
V Position	Vertical Position Adjustment
Sharpness	Picture Sharpness
Return	Returns to Main Menu

Note: Phase, Frequency, H Position, and V Position only appear in RGB Mode.

OSD Submenu

Menu Option	Description
H Position	OSD Horizontal Position
V Position	OSD Vertical Position
OSD Time Out	Time in Which OSD Turns Off if Left Alone
Return	Returns to Main Menu

Utility Submenu

Menu Option	Description
Freeze Frame	Freezes Picture Frame
Reset	Factory Reset to Default Settings
Color Temperature	Color Adjustment in RGB Mode Only
Information	Monitor Info
Return	Returns to Main Menu

Auto Submenu

Menu Option	Description
Auto	Automatically Adjusts Image Size in RGB Mode

Exit Submenu

Menu Option	Description
Exit	Exits OSD

Hot Keys

Hot keys are a quick way of adjusting brightness, contrast, PIP, and the scaling modes. To activate the hot keys simply use the ▲ ▼ buttons on the switch panel to cycle through these modes.

Scaling mode: The scaling mode will adjust the picture depending on the type of formatted DVD disc you are using.

Note: If picture looks stretched, adjust the scaling mode.

Picture in Picture: The small screen in the upper left hand corner will display composite video when in RGB mode.

Troubleshooting

If the monitor does not function properly, refer to the following troubleshooting table for symptoms and possible solutions before contacting Rosen field support.

Note*:* Always use an oscilloscope to verify the video signal. Always use a multimeter to verify voltages. Check actual results against the requirements described in this manual.

Problem	Possible Solutions
No Video	• Verify that the video source is on and has a tape or DVD installed. • Verify that a signal is reaching the monitor using an oscilloscope or another monitor. • Verify that the monitor is turned on. • Verify that the pinout is correct. • Verify that the video input (Analog RGB/ Composite) and video standard (NTSC/PAL/ SECAM) match your application.
Screen is Black	• Verify that the monitor is receiving power. • Verify that the pinout is correct. • Verify that the video source is on and has a tape or DVD installed. • Verify all connections.
Screen is Blue	• Verify that a signal is reaching the monitor using an oscilloscope or another monitor. • Verify that the pinout is correct. • Verify that the video source is on and has a tape or DVD installed.
Color is Out of Adjustment	• Refer to the Utility Submenu on page 15.

Problem	Possible Solutions
Image Flickers	• Verify that the signal cable is secure. • Verify that the vertical frame frequency is 75 Hz or less. If using the monitor with a PC in Windows, change the Display Control Panel to 60 Hz to achieve the best performance.
Image is distorted	• Verify pinouts. • Verify that a signal is reaching the monitor using an oscilloscope or another monitor. • Examine the monitor for pinched or damaged cables.

Cleaning Display

The LCD should be cleaned with a lens grade tissue for cleaning optical surfaces and isopropyl alcohol.

The Display's external plastic surfaces may be damaged by certain harsh, abrasive or staining chemicals. Avoid exposure to such chemicals.

Should an external surface be exposed to such chemicals, promptly clean the surface with a sponge and soapy water.

Technical Support

For technical support or to order parts, contact Rosen Aviation Displays at: 888-668-4955

or visit us at: www.rosenaviation.com

Specifications

LCD Performance	
Screen Resolution (pixels)	1280 w x 1024 h
Display Viewing Area	337.9 x 270.3mm (13.30 x 10.64 inches)
Viewing Angle	
Horizontal	±80º min, ±85º Typical
Vertical	±80º min, ±85º Typical
Contrast Ratio	400:1 min, 500:1 Typical
Backlight Lamp Life (hours)	50,000
Screen Brightness	200 cd/m^2 min, 250 Typical
Mechanical Packaging	
Weight	14.4 lbs ± 5%
Power Requirements	28V DC 40W max.
Video Performance	
Video Standards	NTSC, PAL, SECAM, RS-170
Graphics Standards	VGA, SVGA, XGA, SXGA (75 Hz max)
Video input	1V peak-to-peak, 75 Ohms
Operating Temperature	0ºC - 50ºC
Warranty	2yr

DO-160 Testing

This monitor is compliant with and has been tested to applicable DO-160D standards. For specific information contact a Rosen Customer Service Representative at 1.888.668.4955.

Disclaimer

All information, including illustrations, is believed to be reliable. Users and/or installers, however, should independently evaluate the suitability of each product for their application. Rosen makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use or installation. Rosen's only obligations are those in the Rosen Standard Terms and Conditions of Sales for this product, and in no case will Rosen be liable for any incidental, indirect or consequential damages arising from the sale, resale, use or misuse of the product. Specifications are subject to change without notice. Rosen reserves the right to make changes - without notification to buyer - to materials or processing that do not affect compliance with any applicable specifications.